

# Hillandale



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Phonograph and  
Gramophone Society

THE HILLANDALE NEWS

JUNE 1983 No. 132

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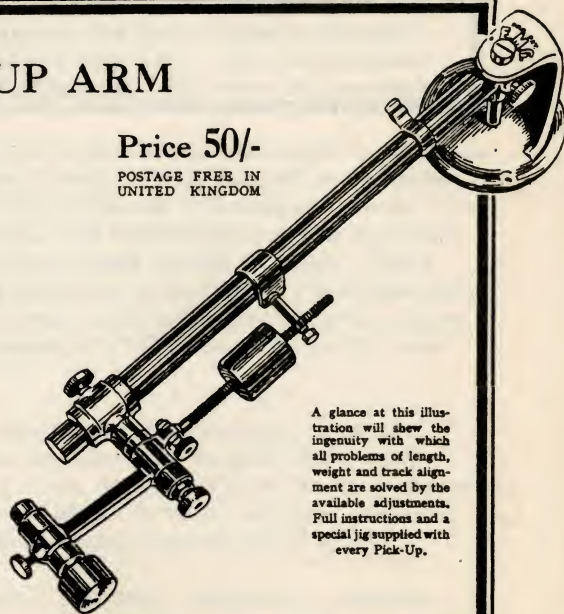
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A glance at this illustration will show the ingenuity with which all problems of length, weight and track alignment are solved by the available adjustments. Full instructions and a special jig supplied with every Pick-Up.

July, 1929



## EDITORIAL

This issue of HILLANDALE is, I suppose, historic in a minor sort of a way, for it is the last one to be typed and edited at The Hoo. No sooner will it be despatched to the printer than I shall upsticks and transfer my household, Daimler, 35 lawnmowers, many gramophones, various old doors and windows and Heaven knows what else to the former Rectory in the village of my childhood.

This Removal of an Editor means that all members wishing to communicate with that Editor should immediately take note of his new address, which is given on the back page of this issue. Experience shows that the addresses of officers in societies like ours tend to remain in circulation long after they are obsolete, and there is not a great deal to be done about it. Please try and impress upon your memories, however, that there was a change of Editorial address in the June 1983 issue, and do not refer to previous issues when you need the Editor's address two years from now. Let me also hasten to reiterate that I only EDIT the magazine. I do NOT DISTRIBUTE it, nor do I have the membership list. Therefore, there is no point in writing to the Editor if you have an enquiry about a faulty copy of the magazine or apparent non-delivery or whatever. I can only pass such letters on, which costs the Society money in extra postage, and may not get done at all if I forget

It is with deep regret that we learn, just as we go to press, of the death of our Hon. Treasurer, John Mckeown. John had been ill for some months past and had already tendered his resignation as Treasurer (an Extraordinary General Meeting to appoint a successor had been fixed for June 14). Our deepest condolences go to John's family and friends. An Obituary will follow in our next.

## THE FEBRUARY MEETING

Once again we were pleased to welcome Gordon Bromly, Chairman of the Recorded Vocal Art Society, to entertain us with an evening of Special Pressings. These are records not widely available to the general public, and indeed many of the facilities formerly afforded the specialist collector have long since ceased to exist. Once upon a time, deleted records could be ordered specially from E. M. I., provided they had the original matrices still intact. Orders were usually limited to three copies, although other special arrangements could occasionally be made, as was the case with the Recorded Vocal Art Society.

Among the records heard were some of these special RVAS pressings, a couple of Phonotype re-issues which had been pressed in vinylite from original matrices, Historic Record Society, Connoisseurs Record Club, R. C. A. Victor Heritage Series (available to the general public about 1947), some of the H. M. V. Archive series of 1951, and a few British Institute of Recorded Sound subscription issues of 1971.

Among the many singers featured were Battistini, Smirnoff, Martinelli, Plancon, De Lucia, Boninsegna, Hempel, Clément, Sammarco, McCormack, Supervia, to mention but a few. The recital was interspersed with explanations and comments from the presenter, which made for a very entertaining evening.

London Reporter



DATING GRAMOPHONE COMPANY LONDON RECORDINGS, 1908 - 1925  
G. W. Taylor

In an earlier article (Hillandale 116), I showed how Victor recordings could be accurately dated by interpolating the matrix numbers in a graph of matrix number against date of first use, the graph being set up from published discographies. The same principle has now been applied in the case of the London-made recordings by the Gramophone Company from late 1908 to the end of the acoustic period in 1925, and can be used for dating HMV, Zonophone and Cinch recordings.

First, a few words of introduction. From the start, the Gramophone Company had a number of matrix series in operation, partly because there were several recording experts, and partly because recording operations took place in widely scattered parts of the globe. Each expert had blocks of numbers allocated to him and his recordings were identified by letters, usually as a suffix but, in many cases in later times, as a prefix. The blocks of numbers did not form a single numerical series, as was the case with Victor covering all their various record sizes. Therefore, one needs to know the allocation of numbers and letters to the various experts, and the dates of their use, if one is to attempt to date an early Gramophone Company recording.

The unravelling of these many numerical series resulted in a monumental publication in the Record Collector (J. F. Perkins, A. Kelly, J. Ward, Record Collector 23, 177-180). Later articles extended the information on Berliner matrices (Perkins and Kelly, id. 27, 177-180) and the details of Fred Gaisberg's recordings until 1919 (Perkins, Kelly and Ward, id. 24, 277-287).

Most British collectors will come across London-recorded discs, and it happens that the matrix numbering systems for such recordings become relatively simple in late 1908, and so continue at least until the end of the acoustic period in 1925. In 1908, the London expert was Will Gaisberg, and his suffix letters were 'e' for 10-inch records and 'f' for 12-inch records. In 1911, he ceased to use these series exclusively, but the series continued, the new recording experts being identified by various prefix letters - for dating purposes, these prefix letters can be ignored. About 1912, two new series, prefixed by the letters HO, were started, the recording experts again being identified by suffixed letters. The experts for the 10-inch series are indicated by the suffixes ab, ae, and ak, while those in the 12-inch series are shown by ac, af, ai, and c. The two are different numerical series, and run until about 1921.

Early in 1921, three further series were started, with the prefix Bb for 10-inch HMV recordings, Cc for the 12-inch size and Yy for Zonophone recordings. In these cases, only one numerical series was used, so this system (for the HMV issues) is very like that used by Victor from the start. In the British series, the expert was again indicated by suffix letters. Both series run into the electric period.

Graphs of matrix number against first date of use were constructed using the discographies of Elgar (J. N. Moore: Elgar on Record, O. U. P. 1974), Louise Kirkby

Lunn (J. B. Richards, Record Collector 19, 101-143), Evan Williams (G. H. Lewis, id. 24, 242-277) and others, particularly from Rust's compilation, The Complete Entertainment Discography (Arlington House, 1973).

### The 'e' and 'f' series

In both cases, there is a smooth relationship between matrix number and date of use. The 'e' series can be represented over much of its range by two lines meeting at a shallow angle, and the 'f' series by one straight line, perhaps decreasing a little in slope in the last few months of use. The data for constructing the graph are as follows:

'e' series	Date	Number	
	Start 1909	9320e	} straight line
	mid 1912	15300e	
	end Oct 1914	18460e	} straight line

The series ended with 9233e at end November 1908. The earliest 'e' I have found is 9306e (16 December 1908, Farkoa). Data are scarce after Ak18451e (29 October 1914, Kirkby Lunn). The series was reported to have reached 19700e in 1916, and the highest number traced by Perkins, Kelly and Ward was Y21990e. However I have found several numbers greater than that, Y22244e to Y22247e (13 December 1920, Lauder). Other Lauder numbers during this late period are 20878e - 20880e (20 August 1917), 20911e, 20912e (29 September 1917), and 21313e - 21317e (10 October 1918). These points fall well below a projection of the second straight line portion of the graph (ending end October 1914) and dating of 'e' matrix numbers between October 1914 and August 1917 must be rather tentative.

'f' series	Date	Number	
	start 1909	2700f	} straight line
	start 1914	7800f	

The series started at end November 1908 at 2741f. The earliest 'f' I have seen is 2812f (15 February 1909, Whitehill), and the latest is AL8276f (29 January 1915, Elgar); this point lies somewhat below an extension of the straight line of the graph. The series is reported to have reached 8500f in 1916 and the highest number traced by Perkins, Kelly and Ward was Z8756f.

### HO series

The 10-inch recordings were suffixed with ab, ae, and ak, and the 12-inch with ac, af, ai and c.

The graphs of matrix number against time of use for both series are S-shaped, but the scatter in the data is small. The curves can be reasonably constructed from the following points:



Date	Matrix Number	
	10"	12"
Mid 1912	-	200
Mid 1913	550	-
end March 1915	1350	950
end 1915	2200	1350
mid 1916	2900	2000
end 1916	3300	2420
end 1920	6000	4660

straight lines,  
both series

The earliest 10-inch number I have seen is HO500AK (May 20 1913, Lauder) and the latest is HO6093ae (17 February 1921, Trix Sisters). The earliest 12-inch number I have seen is HO20laf (15 July 1912, Kirkby Lunn) and the latest is HO4620af (16 November 1920, Elgar).

### Bb, Cc and Yy series

These series, using one numerical sequence, started in 1921. A graph of number against date of use is a good straight line which can be constructed from the following points:

Date	Number
end March 1921	0
mid 1925	6250

The earliest number I have found is Bb70 (15 April 1921, Trix sisters). The three series continue into the electric period. All the graphs are relatively 'noiseless', and a matrix should be dateable within a month or so for all series considered.

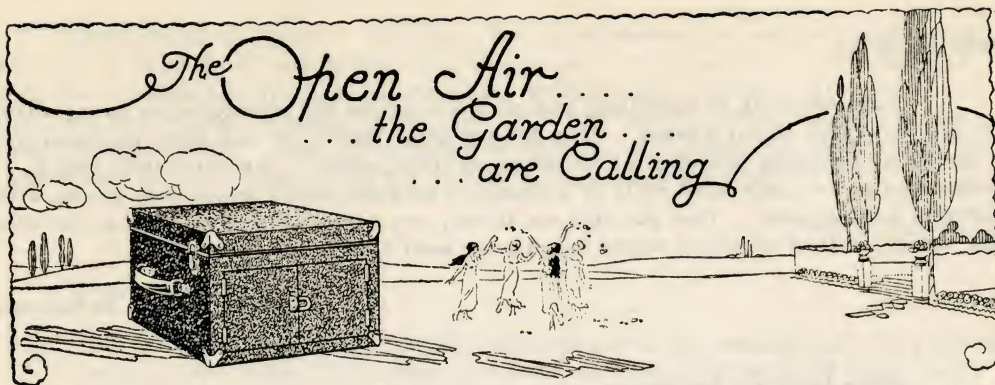
Consideration of the 'e' series/time relationship exposes an anomaly in the Evan Williams discography, concerning the use of matrix numbers around 14050e to 14070e. The following data fit the graph well:

yl4056e	1 September 1911
yl4057e	1 September 1911
yl4068e	8 September 1911

The following do not fit:

yl4049e	30 August 1910
yl4050e	" " "
yl4051e	" " "

The data are scattered throughout the discography (which is alphabetical) so the date, August 30 1910, is not a misprint. It seems likely that the compiler had the group of matrix numbers together under one date, which was incorrectly noted as 1910 instead of 1911. As with the Victor recordings, the date of first use of a matrix number is the one that fits the graph. Dates of later takes of the same number will fall below the line, and the graph can only show the date on which the recording was first attempted. There may also be cases where a number was allocated but not used till later, though I have not come across any.



**M**ORE and Evermore does Music cast its Spell upon us. The Sunshine and Spirit of Summer-time lure us out-o'-doors—but we would have it that Music goes with us.

**T**O sit in woods or charming places of the Outdoors, and to listen to some sweet singer—some Master making magic music from an Instrument—to Dance upon the Greensward to some captivating strains—is joy added to enjoyment.

**T**HE Portable Gramophone made it possible—but it needed the "Cliftophone" to make it Perfect. Here at last came an Instrument which not only gave a new Realism of Reproduction, but gave as well an amazingly greater Volume of Tone—in True Musical Beauty.



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**I**TS Realism of Reproduction is so amazing as to seem Unreal. *You can almost feel the presence of the Artistes* when it plays. And—the Volume of Tone is such that from the "Cliftophone" Portable Model you get as much or more than you can get from the more expensive Cabinet Models of other makes.

**A**N Ideal Instrument for Outdoor Use—the "Cliftophone"—of Musical Charm and Power beyond compare. Hear it at your Music Dealer's to-day. It will be a revelation—thrilling!

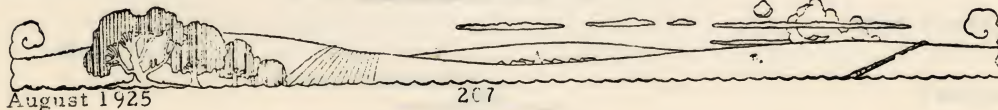
**T**HE new "Cliftophone" Portable has been called "the Baby Grand of the Gramophone World," and deserves that description. In compact form, 7" high, 12" wide and 14" deep—it is indeed a *multum in parvo*. In leatherette cover with metal bound corners and metal fittings—it is as handsome as its qualities are wonderful. And—its price is only £7 10s.

**I**N case of difficulty, write us for the name of the nearest "Cliftophone" Dealer and for a very interesting Illustrated Booklet. You can hear the "Cliftophone" in London at HARRODS—SELFRIDGE'S—IVARING'S—KEITH PROWSE'S—CRAMER'S—HAY'S—and all other High-Class Music Stores—or, you are cordially invited to come to our Showrooms in Bond Street and to hear it in its Home. In any case, for the Love of Music, hear it—as quickly as you can.

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"Leaders in the Musical World since the year 1812"





Dear Tabitha,

I am thinking of installing one of those quaint old phonographs in my salon for the diversion of my guests. The Edison Gem Model 'D' has been recommended to me as an amusing machine which takes up little space. Unfortunately these devices seem to come uniformly in a shade of maroon which would play havoc with my curtains and carpets. Can you tell me if they are obtainable in eau-de-nil or chocolate brown, either of which would harmonise well?

Madame Gilet de Sauvetage

Dear Madame Sauvetage,

Regrettably the Red Gem is seldom encountered except in red. However, I am sending you a pattern from which you may crochet a cosy for the machine in colours of your own choosing. Another attractive idea is to cut out pictures from seed catalogues and affix them to the machine with mucilage in an interesting montage. This scheme has the added advantage of being equally applicable to the horn.

Tabitha

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Dear Tabitha,

I am newly married to a record collector. Yesterday Reginald brought home a large number of Nellie Melba records, all in their original pictorial covers. Since they were a little dirty he carefully cleaned the records and left them to dry. Eager to help and to share in my husband's interests, I ironed them for him, and I am afraid many of them have gone slightly out of shape. What should I do?

Dulceola

Dear Dulceola,

You should have used a steam iron at its lowest setting. Unfortunately, once a record has gone soggy there is little one can do. Your husband will just have to get another set of records, I am afraid. In the meantime, point out to him that this is just another of life's little set-backs. In years to come you will have many a laugh over this.

Tabitha

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Dear Tabitha,

My husband is crazy. For years he has maddened me with a gramophone which fills the house with a terrible clacking noise. As though that were not bad enough, he has now acquired an Edison Home Phonograph. Since it arrived I have hardly seen him except at meal-times, and he hasn't fixed the coal-house door or unblocked the back drain. I've a good mind to tell him that either the phonograph leaves the house or I will. Do you think that would bring him to his senses?

Columbia Trump

Dear Columbia,

It might. First, check to see if the phonograph has suitcase clasps at the sides. If it has, the odds are that your husband might make an undesirable choice. From your description of the gramophone I think the soundbox needs attention. Try new gaskets, or adjustment to the stylus-bar.

Tabitha

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Dear Tabitha,

I met this boy at the Phonofair last year and am very much in love with him but now we always quarrel because all the time he keeps on at me to do something very bad and I won't. He says I am silly. I don't want to lose him. Should I give in?

Goose-neck

Dear Goose-neck,

Of course not, you poor dear. I expect your boy is trying to persuade you to play several records with the same steel needle. Stick to your principles and go on changing the needles. If he will not respect your point of view, give him up. No good can come from attachment to a cheap-skate.

Tabitha

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Dear Tabitha,

Next month our town is to be honoured by a visit from the Prince of Wales, and our Society would like to present him with a talking machine. Can you suggest an appropriate model?

Bebe Jumeau

Dear Bebe,

A Junior Monarch?

Tabitha.

In 1888, the year in which Edison marketed his Improved Phonograph, another American, Oberlin Smith, suggested in an article in *The Electrical World* (September 8 1888) entitled *Some Possible Forms of Phonograph* that the mechanical phonograph had its limits according to the laws of nature. He went on to describe an apparatus of his own making that registered sound electro-magnetically. He used a ribbon of cotton or silk saturated with pulverised iron or slivers of steel wire. He did mention solid steel wire, but he feared that the magnetic impulses would distribute themselves uncontrollably over the wire and make 'knots' in wrong places. Although in advertisements in *Electrical World* in 1888 machines were already being offered together with 'magnetic wire silk or cotton' this invention was not applied or used by anybody further.

The next step was made in Denmark, where an engineer in the Kopenhagen telephone service, Valdemar Poulsen, patented his Telegraphon in 1898. This invention also used the principle of transforming electrical energy in magnetic force fields of varying strength. Unlike the pulverised sound-carrier of Smith, Poulsen used a homogeneous steel wire on which telephone calls were recorded. Poulsen received many honours and a gold medal at the World Exhibition of 1900 in Paris.

Around the turn of the century another two German inventors, Mix and Graf, developed a metal wire of special quality and, shortly afterwards, a steel tape. Unlike the cylinder and disc phonograph of 1900, the Telegraphon played without wear and for a much longer time. Experiments proved that the wire and steel tape kept their magnetic properties completely even after having been played 2200 times. The wire Telegraphons could record continuously for thirty minutes and the larger and less practical tape version for more than an hour. One thing, however, was not in their favour: the Telegraphon was no louder than the telephone in 1900.

For dictating purposes, the Telegraphon was widely used, albeit only for a short time. The machines were manufactured in the USA by the American Tele-graphone Co., Springfield, Mass. In Denmark Poulsen founded the Dansk Telegra-phenen Fabrik A.S. This company also produced machines that used round metal discs.

In Germany Dr. Curt Stille started experiments in his own company, Telegraphie GmbH System Stille, with steel wire and perforated steel tape for sound recording, in 1922. He used the relatively new electron tubes in developing an amplifier, and met with reasonable success. He advertised in the *Elektro-technische Zeitschrift* his wire recorder, the Dailygraph, in 1930.

Another successful development in the twenties was the Blattnerphone, which was produced on a reasonable scale in the following decade. The German scientist Blattner, who was in fact deeper involved with talking films, used a steel tape of 6mm



width. The BBC bought such a machine in 1930. A second was procured in 1932. In the same year, a third machine was bought, which used a 3mm steel tape; a full spool was good for 32 minutes' playing time.

In the period 1932-4 in England, Marconi (who had obtained the Blattner-phone patents) constructed a gigantic steel tape recorder for the BBC, the Marconi-Stille MSR - 3. For this, too, a steel tape of 3mm width and 0.08mm. thickness was used. The tape was played at a speed of 90 metres per minute. The company C. Lorenz A.G. produced a rather similar Stahltonmaschine (steel sound machine) in the same period.

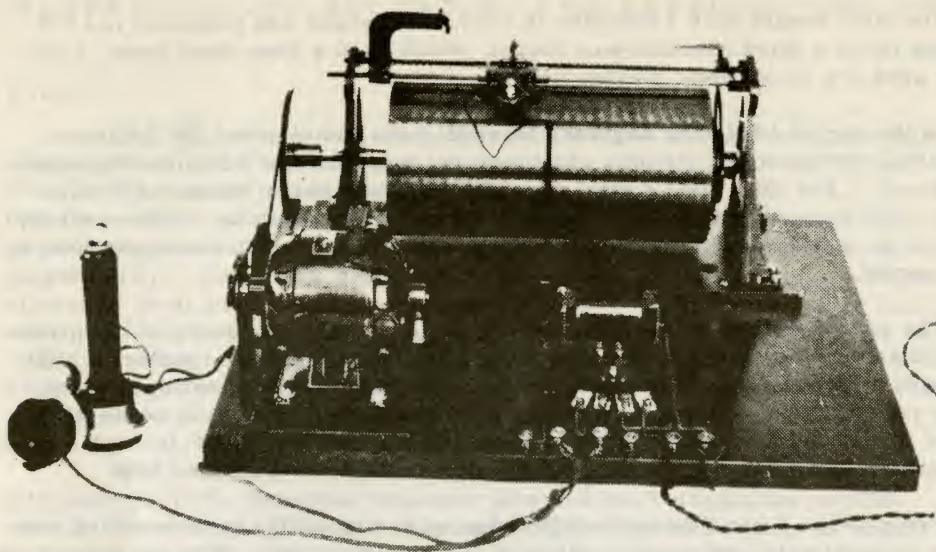
The success of these machines was partly due to the discovery of the principle of the bias current by the Americans W. L. Carlson and G. W. Carpenter in 1927. This included a high-frequency pre-magnetisation by means of alternating current during the recording, a system that greatly improved the quality and dynamic properties. The invention by Schueller in Germany of a magnetic 'Ringkopf' (circular head) made it possible to improve the quality of wire recordings also, in the 1930s.

From 1931, Fritz Pfeleumer of Dresden was, with AEG, experimenting with paper tape covered with iron powder which could be magnetised. With the help of the research facilities of the I. G. Farbenindustrie A.G. at Ludwigshafen (now BASF) in 1934, 50,000 metres of tape of acetylcellulose with iron oxide ( $\text{Fe}_2\text{O}_3$ ) was produced and the first Magnetophon was exhibited at the radio fair at Berlin in 1935. The speed was 150cm per second and the playing time was approximately 70 minutes. The new tape was artistically baptised in 1936 with the recording of a concert by the London Philharmonic Orchestra under Sir Thomas Beecham, at Ludwigshafen.

The tape speed was reduced to 77cm per second with the introduction of the AEG Magnetophon K4 in 1939. A major improvement in quality was established in 1940/41 with the introduction of the bias current for tape recording. Again in 1944 an improvement was added in Ludwigshafen in the use of specially treated PVC foil, known as 'Luvitherm'.

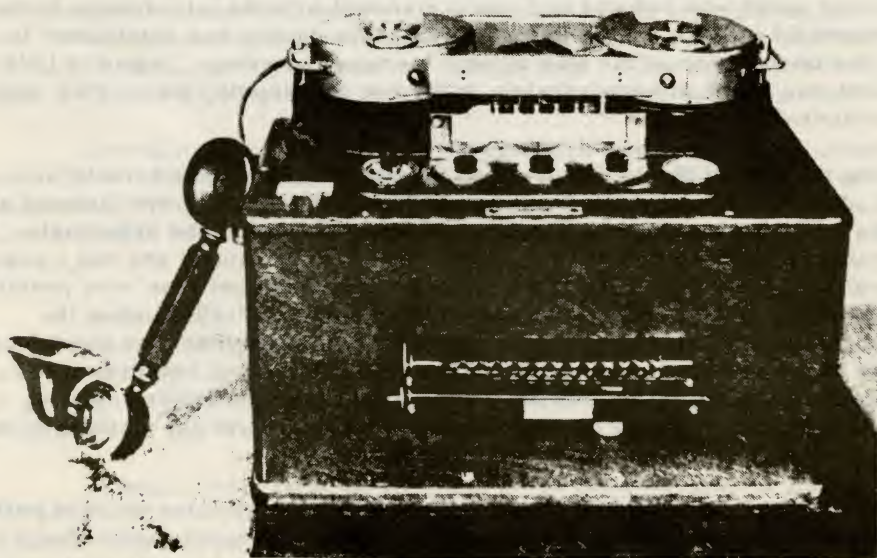
During the Second World War German technicians made considerable improvements. Radio monitors of the British and US secret services, who listened all day to German broadcasting stations, finally realised that many of the broadcasts they heard could not possibly be live. Yet they sounded very natural and had a continuity of sound as well as a lack of surface noise, which would not have been possible with disc recordings. The mystery was solved on September 11 1944, when the Allied Forces conquered Radio Luxembourg (occupied by the Germans for about four years). Here was discovered a new Magnetophon with outstanding properties. It was a very cumbersome apparatus that used 35cm spools with Luvitherm, with a playing time of thirty minutes at a speed of 77cm per second. All the machinery was shipped to England and the USA where it was thoroughly studied.

Apart from the big studio Magnetophons there were also more-or-less portable models which were used in important courts of justice to record proceedings in political cases. After the end of the war these testimonials of a horrible past came



1) Poulsen Telegraphon, Danish, c. 1900

2) Stille wire recorder, c. 1930





into the possession of the Allied forces.

It was only in early 1947 that the Military Authorities released the title 'secret' from the Magnetophon and industry could be informed about it. In London a very detailed report was published by the British Intelligence Objectives Sub-Committee under the title 'The Magnetophon Sound Recording and Reproducing System'. The report was made by M. J. L. Pulling (BBC), E. M. Payne (EMI) and H. E. Parker (Ministry of Supply), and contained diagrams, photographs and descriptions of the Magnetophon.

In the USA Marvin Camaras of the Armour Research Foundation in Chicago was still experimenting with wire recordings during the Second World War. Unlike Poulsen, who magnetised the side of the wire, Camaras magnetised around the core of the wire. At the same time Bell Telephone was engaged in transversal recording on steel tape. The machine using this system was called 'Mirrorphone' and people had great expectations on it at the time.

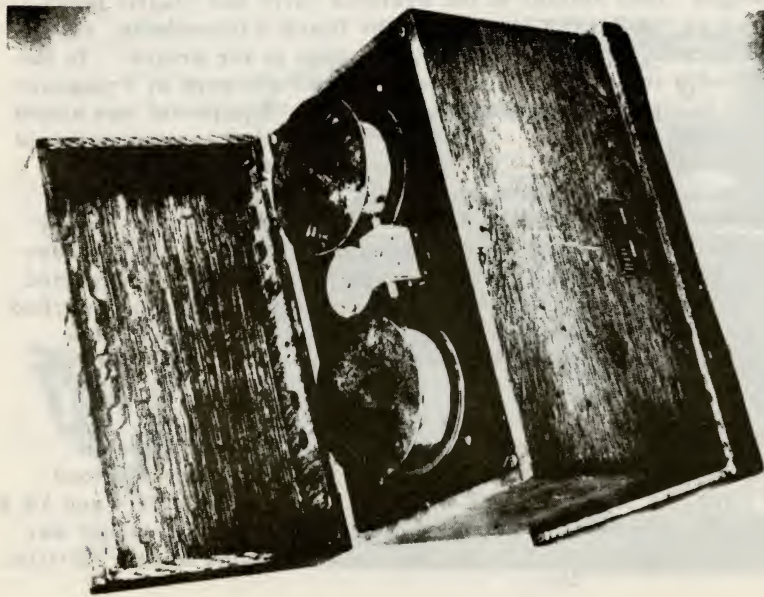
In 1944 General Electric announced a magnetic tape recorder which used a very thin wire and could record for 66 minutes. The most important manufacturers of wire recorders until well into the 1950s were Brush Development Co., General Electric, Magnecorder, Air-King and Webster-Chicago.

It might have been expected that after 1947 the industry would have hastened to develop the tape recorder as fast as possible, now that the secrets of the Magnetophon were made public. History shows a different picture, however.

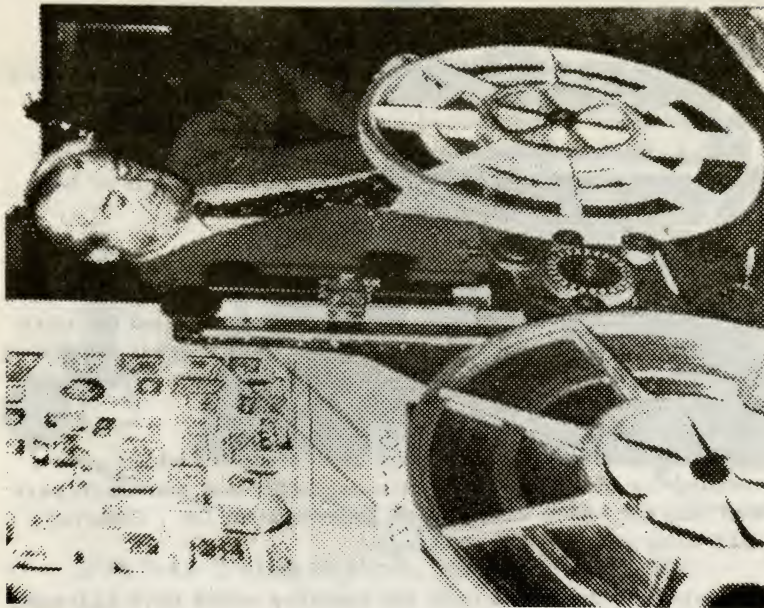
In 1949 the Dutch Radio Bulletin (No. 4, April) devoted much attention to a wire recorder. They thought "That neither of the systems (wire and plastic tape) were sufficient to be chosen as THE SYSTEM." The Dutch Wiramphone, a wire recorder on which 78 rpm records could also be played, came in for praise. In the same issue, a visit to the radio studio of the American Forces Network at Frangfurt was described and attention was paid to recording equipment: "Equipment was abundant, even the most modern tape recorders. The majority of the equipment was sold by RCA and of the latest type."

In the early 1950s the industry was beginning to pay attention to the 'happy few' among the public who had plenty of money. Although dollars were very scarce (these were the days of the Marshall plan), American tape recorders were imported into Holland (Webster and Magnecorder). Philips Lampworks at Eindhoven launched the first Dutch non-professional tape-recorder in 1951: the Blauwe Donau (Blue Danube) model EL 3540/45, with a playing time of 45 minutes and a speed of 19 cm. per second.

In 1952 this model was one of the most expensive tape recorders on the Dutch market. The price was 2350 Dutch Florins (including microphone and loud-speaker.) The Webster Type 210 tape recorder already had two speeds (9.4 and 18.8 cm. per second) and could play for two hours at a speed of 9.4 cm. The price was 1315 Dfl (including spool and microphone). Other brands were Sound Mirror (British



3) Poulsen Telegraphon (USA) c. 1907



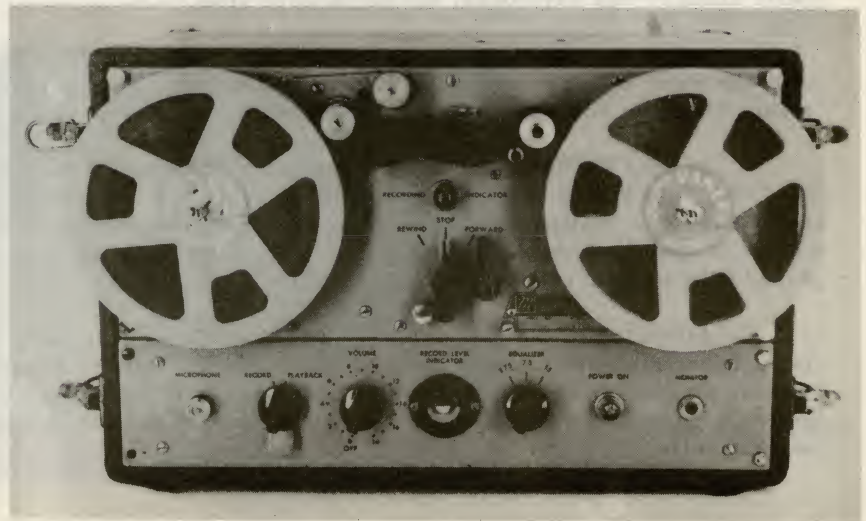
4) Blattnerphone, 1932





5) AEG Magnetophon K3, 1935-6

6) Magnecorder M33A, c.1950



manufacture, 19 cm. per second, max.  $\frac{1}{2}$  hour, 1050 Dfl); Record-O-Matic (Dutch manufacture, same speed and maximum playing time, 850 Dfl); and E. A. M. I. (tape deck in case with pre-amp, 385 Dfl).

Further development of the tape recorder went quietly during the fifties. Recording techniques became standardised. Tape transport was no longer from right to left when recording, and the position of erase and recording heads became uniform. Most machines were equipped with tape-run counters. The paper tape, still widely for sale in 1952, gave place to plastic tape. The majority of the non-professional tape recorders had one speed only and the possibility of recording two tracks on the tape.

The sixties were extremely interesting for electronic sound recording. Four-track techniques enabled stereo recordings to be made easily. This led simultaneously to better equipment, now often with three speeds. With the introduction of printed circuits and transistors, tape recorders now became more portable and could operate fairly economically on batteries which gave the owner more freedom to take the recorder wherever he wished.

Another important development was the introduction by Philips of the Compact Cassette and its recorder in 1963. RCA had already sold pre-recorded tape cartridges in the USA from 1958. These were plastic boxes of the size of a pocket book, containing two spools with 0.8mm wide four-track tape. With a speed of 9.5 cm. per second, the playing time was equal to that of a long playing record. The cartridges were sold with an automatic changer. Since the latter often stuck, the system was not a success.

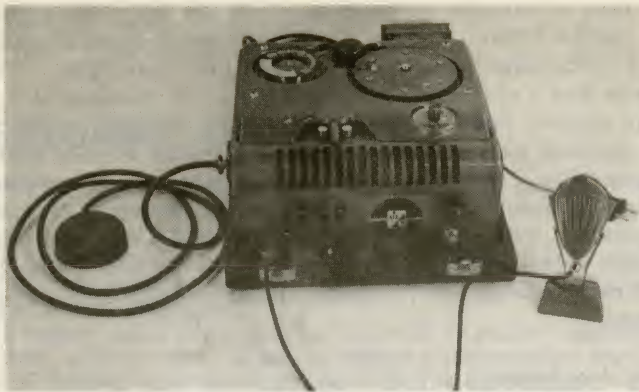
A subsidiary of 3M, the Revere-Wollensak Co., also marketed a cartridge with one spool, played at 4.7 cm/sec. The tape was half the normal width and only two tracks could be used. Columbia Records took care of the repertoire. An automatic changer was developed, but sales were slow.

MGM used this system as well and introduced the Play Tape 2 Track, which used one spool with pre-recorded tape in a cartridge. The player was called the 'Music Machine' and sold for less than 30 dollars (it had no automatic changer).

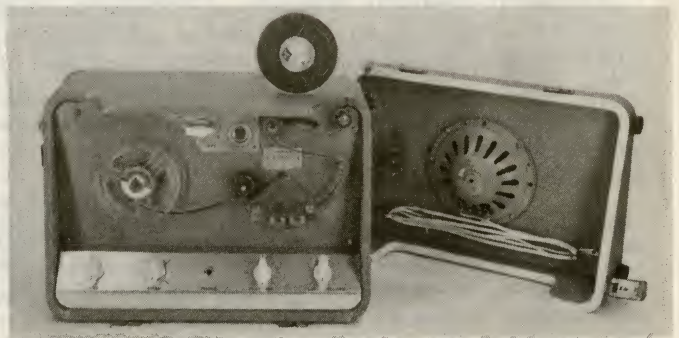
In 1963 Philips launched the Compact Cassette and its small recorder EL 3300. This struck success. In order to achieve a maximum spread of this system worldwide, Philips granted free licences to companies provided they would adhere to specified standards of quality. The tape had a width of 3.81 mm and is played with a speed of 4.75 cm/sec.

Attracted by the success of Philips, the German Grundig company introduced its own cassette system at the Funk Ausstellung in Berlin in August 1964. The other German manufacturers Telefunken and Blaupunkt joined the system. After two years, however, manufacturers lost interest in this system and they all switched to the Compact Cassette.

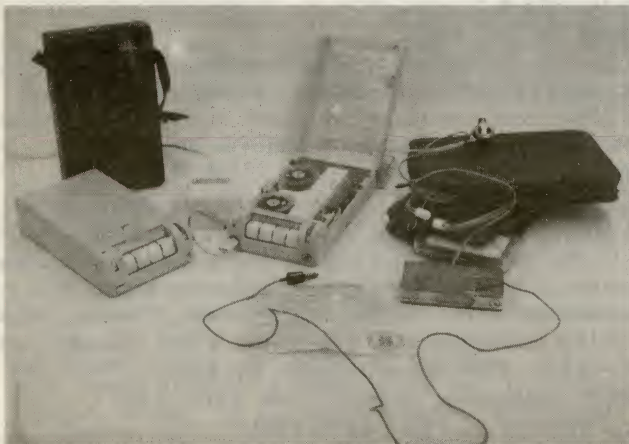




7) Webster  
wire recorder  
C. 1948



8) Peterson PM 8  
tape recorder  
C. 1952



9) Miniphon  
wire recorder  
C. 1958

The only other type of cassette to have survived the majority of the problems is the Stereo-8 Track. In the 1950s, George Eash of Cleveland had already developed a one-spool cartridge operating on the closed loop principle. The slightly greased pre-recorded tape had a maximum playing time of 30 minutes at 9.5cm/sec. This Fidelipac, as it was called, had a modest sale. This changed when, with the four-track technique, it became possible to record eight tracks on this tape which allowed for stereo reproduction. William Lear, a manufacturer of sporting aeroplanes, applied an automatic switch which made it possible to switch directly from one pair of tracks to the other. The Stereo-8 Track now had a maximum playing time of more than one hour with a speed of 9.5cm/sec. In the USA particularly, the pre-recorded Stereo-8 Track became very popular in cars, and a home recording device was later developed.

The most recent development (1978/9) in the field of cassettes for non-professional use is the Elcaset. This system is not meant as a competitor to reel and compact cassette recorders, but more as an addition whereby the ease of a cassette is combined with the sound quality of open reel tape recorders. The tape is 6.3cm wide and the speed is 9.5cm/sec. Unlike the compact cassette, the tape is drawn out of the (big) cassette when played and transported normally along the heads. With this system, it was hoped to avoid the problems of the less well-running cassettes. The success, however, was very limited. In 1979 only Sony, Teac and Wega had any models on the market in Holland, and these varied in price between 2000 Dfl and 3000 Dfl.

It seems that the success of cassettes for music and home recording remains restricted to the compact cassette. For professional purposes, however, cassettes are manufactured in all sorts and sizes; for example, for telephone answering equipment, background music, sound-and-picture machines etc. Here developments continue.

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## REGIONAL ROUNDUP

Mike Field

As might be expected, each Branch seems to have a prime interest which more or less dominates the meeting activities. The Midlands Branch has a strong predilection for musical personalities and their records. East Fife seems to have cornered the market in black portables and the Chilterns Branch has a very definite leaning towards the machines and records are considered to be an incidental by-product made to justify the manufacture of machines!

This trend was illustrated at the 20 February meeting of the Chilterns Branch held in John Smith's home, where 12 members congregated for a 5 hour session. Several arrived clutching various items of their collections to supplement the already outstanding array of machines on display. The arrivals included a HMV Baby Monarch and an Edison electric phonograph of 1903 in its original packing case, which also contained a scrap of paper with the original owner's sometimes disparaging comments on patent innovations supposed to improve performance. Although a machine stronghold, a 1926/7 Diamond Disc did make an appearance. It contained a Christmas message to dealers from West Orange personnel ranging from the manager to the tea boy, exhorting them to greater selling efforts. Mike Appleton, who provided this record, also brought some early literature showing very expensive hand made cabinets for Edison machines. A little light relief from machinery was provided by Jim Balchin who, to a great round of applause, harked back to his busking days by playing a harmonica to the accompaniment of a player piano roll. To sustain all this activity, Sue Smith and family provided an excellent buffet to the delight of all.

The 16 April meeting of the Hereford Branch was held in Lawrie Wilson's home. Among those attending was an American guest member, Tim Fabrizio, who gave an illustrated talk on Chicago talking machines. His presentation was a shortened version of one he was due to give to the London meeting on the 19th and provided a fascinating account of the vicissitudes of the STAR, ARETINO and BUSY BEE talking machine manufacturers. Just to balance the evening, Lawrie was persuaded to demonstrate some of his British machines, notably an EMG and a HMV re-entrant model. Merle Gardner contributed a little more to the "oldest person to record" controversy (?) and produced a recording of 87 year-old Mrs E Parfitt singing "Angels Ever Bright and Fair". As usual, Mrs Lawrie excelled in providing sustenance for the famished.

Up in East Fife, the last two meetings held at the Castlehill Centre at Cupar have been devoted to records. The first concentrated on those of Scottish origin or flavour. Famous labels such as Beltona, Zonophone, Regal, Broadcast and Imperial ran special series of Scottish records, while one less well known firm, the Great Scot Record Co., recorded and pressed their discs in the basement of Megginch Castle in Perthshire. All the examples were played on - that's right - portables! The second meeting featured Edison Bell, including Winner and Velvet Face discs, the latter having an unusually quiet surface despite being produced in the acoustic era. For once black portables were ousted and examples were played on Chris Hamilton's HMV 130 and - horrors - a modern electric portable!

There was a good turn out for the Midlands Branch meeting on 26 March, where the programme was given by Mrs Dorothy Jarrett, with background research by husband Jack. The title, "The Odd and the Unusual" was extremely apt and among the unexpected bill of fare was George Formby Jr rendering "La Donna E Mobile", a female tenor, a male soprano, Will Fyfe singing in both Welsh and Irish brogues, a musical saw playing "Song of India", a duet by Elizabeth Schuman and herself, the sextet from Lucia Di Lammermoor played by solo banjoist Eddie Peabody and the famous (or infamous) Florence Foster Jenkins. Possibly only the Jarretts could have put on such a programme and it was well received and enjoyed by all.

# Book Review

LOOK FOR THE DOG. An Illustrated Guide to Victor Talking Machines, by Robert W. Baumbach.

Robert Baumbach's book *Look for the Dog* is one of those select publications that every true buff will want on his shelf. When so many recent essays into phonograph and gramophone history have been suspect - with much material lifted from the usual sources and dignified as 'research' - it is pleasing to welcome a work of undoubted scholarship.

Basically the book is a compilation of data on each of the machines manufactured by the Victor Talking Machine Company between 1901 and 1929. It is, however, much more than this. There is a potted history of the Victor Company: Eldridge Johnson's founding and management of it; a listing of all the machines sold, together with an account of the development of the Victrolas through to the Orthophonics with their radio units and early record changers.

There are over one-hundred-and-twenty illustrations of the various machines all described in detail, allowing immediate identification, dating and original price. Purists would perhaps have preferred the contemporary advertising blurb that accompanied each model as it came on the market. Robert Baumbach's modern evaluation of each of the various models is, however, informed and illuminating and of special interest to present day collectors wanting to know both the weaknesses and strengths of any particular model. In rectifying these defects the sixty or so pages of original servicing information covering spring and electric motors, sound boxes and even the frighteningly complicated early record changers will be especially welcomed by the collectors of today.

Of particular interest, certainly to me, are the chapters on Victor accessories and experimental Victrolas. In the former my eye was caught by an attachment for playing Edison discs and the adaptor *Illustrator* which, when combined with a magic lantern device, allowed Victor owners to project images through the horn! As to the experimental models the Victor Company had as many flights of fancy as Edison with, for example, a plurality of discs, sound boxes and horns all assembled as a single machine - a fore-runner of today's multi-channel reproducers. And if Edison had his 125-foot long recording horn, Victor constructed one 40 feet long with a mouth 10 feet by 14 feet, on the basis that this would reproduce the lowest note of a bass viol.

In '*Look for the Dog*' Robert Baumbach has produced a work of undoubted authority - get it.

Joe Pengelly



# Correspondence

Dear Christopher,

I am somewhat behind with things at present, so I have only just caught up with reading the last few Hillandale magazines. A number of items have caught my attention, and I should like to contribute some of my own.

## 1) Oldest (earliest born) person on record.

Sir J. G. Tollemache Sinclair made records for both G and T and Odeon; I have GC 1333 (matrix 4848h November 1906) where he recites, rather badly, 'La jeune fille mourante'. I looked up Who Was Who in the library, and found the following:

Sir John George Tollemache Sinclair, 3rd Bt. Born Edinburgh 8.11.25.  
Lieutenant Scots Guards (rtd.) Formerly Page of Honour. MP (L) Caithness-shire 1870-85. Owned about 78000 acres.....address Thurso Castle Caithness. Club: Travellers'. Died 30.9.1912.

So Sir John seems to be an excellent contender as far as ordinary commercial records are concerned.

Incidentally, another very early instrumentalist to have recorded (and almost certainly unknown to all record collectors) is the harpist Zabel, who wrote many pieces for the instrument, and who toured Europe and America with Gungl's orchestra from 1845-48; he was the harpist in the Imperial Ballet in St Petersburg from 1854 until his death in 1910. He was born in 1834 or 1835 (depending on which reference book you read); I have him playing a march (by Alvarez, and not written by himself, unfortunately) - on a 1901 Russian Berliner (27350), of course!

## 2) Dubbings

George Frow's reference (December 1982) to dubbings reminds me of a topic which for some weird reason never seems to be mentioned. Is it because those that turn up are aurally 'hidden from view' by acoustic reproduction (apologies to the Editor!) or by the surface noise on the final shellac pressings when reproduced electrically (apologies to Joe Pengelly!)? Certainly some dubbings betray their presence by painfully obvious tonal changes whereas others are just detectable by listening for recorded surface noise (my electronic box of tricks for reducing the 'crackle' part of background noise helps a great deal here).

Surely every collector knows of the dubbings from cylinder (Pathé etc.), the 1930s sample and demonstration records, the occasional soundtrack recordings (Walt Disney). But what about the following examples, for instance? In particular, the two early HMV sets mentioned have such drastic changes in sound quality that someone must have noticed.....

HMV (Gramophone Company) dubbings:

09308 Gas Shell Bombardment record (taken on the front line near Lille, 9th October 1918).

Here there are three clues: there is appended an advertisement for War Bonds: there

is obvious surface noise change between the two sections: the explosive sound of firing the shells is converted to an extraordinary bonging noise, suggesting the use of a (resonant) horn gramophone to play the original recording.

DA113 Caruso: Di Quella pira

This is a worrying one because of the possibilities it raises: the record should be the same as 2-52489, and in fact it has the same matrix number (A3103). But the grooves are different, and the tone of voice quite different, so that an electrical dubbing of the original is practically certain; but there is no suggestion on the record that anything has happened - not even a triangle to indicate electrical recording. Suppose there are others like this, perhaps re-recorded at a different speed from the original. ....

Album 56 Philadelphia Orchestra /Stokowski: Scheherazade

Side 6 is a dubbing with matrix number A39349: a clue here is the addition of VIII above the triangle.

Album 79 Stokowski: Beethoven 7th Symphony

Sides 1, 8, 9 and 10 are dubbed (rather badly) (D1639, D1642, D1643); the matrix numbers this time have had TI or TI added above the triangle.

Album 362 Horowitz /NBCSO / Toscanini

Here sides 1, 2, and 8 are dubbed; they have III or II added to the usual American matrix number.

DB 1390 Harold Bauer

The side with Schumann's Novelette op. 21 no. 2 has T 1 added around the triangle symbol (It is an excellent dubbing).

C1329 Ernest Lough: Hear My Prayer

I had great fun here! I looked through 50 copies of this record and found miscellaneous combinations of CR1020 with III, IIIA, VIIIA, III T1 and III TI. So it seems to have been necessary to use two original takes of each side, plus the same original takes made on an alternative recorder (A), plus transfers (T) of originals. There is another version (looks like 1950s pressing) with CR1020-6C and CR1021-8C; here we have what must be a dubbing (there are mysterious tiny gaps in the sound!), presumably indicated by the C (copy?).

Columbia dubbings:

So far I have only found a dubbing made on the other side of the Atlantic:

Set 284, 67849-D to 67853-D (issued here as LX 16-18 and LX 29-30), Glazounov conducting his 'Seasons' music: most of the sides are WAX (British) matrix numbers but Side 4 is W294201 and Side 7 is W294202 and sound quite obviously as copies - which means I still have to find the British set to get a consistent sound.

It rather looks as though the problem was getting matrices safely across between Britain and America - or could there be some other explanation for the dubbings (apart from Lough's record, of course, whose matrices must have been worn down



at a fair old rate)?

It is striking how good some dubbings are - it seems that records could be played and re-recorded with a fairly smooth response and sufficiently low surface noise even in the 1930s and 1940s.

The rest of my topics appear not to have had an airing before:

3) Variable Pitch Grooves

I don't mean speed changes of course, but the technique of adjusting the spacing (pitch) of the grooves to take account of variation in the volume of the recording. This was used by Deutsche Grammophon when the use of tape masters allowed the process to be automated (using a separate 'look-ahead' playback head).

I have Decca X182 to X184: Queen's Hall Orchestra playing Dvorak's Symphonic Variations (this would be about 1936-7). Sides 1, 2 and 3 of the six have quite obvious changes in the groove pitch: side 2 especially has no less than 10 changes between different pitches, ranging from about 65 to the inch up to around 100 to the inch.

Why was this not tried more ofte? How was the adjustment made? Does anyone know how extensive this technique was in the 1930s?

4) Columbia 'LPs'

In the 1932 Columbia catalogue, there are a whole batch of 33 rpm records (there are 51 of them by 1935). For those without the catalogues, they are YBX series, yellow label. I leave the rest of the mystery as a puzzle to those who do have the catalogues! Where are these records now? Who even mentions them? Incidentally I think they must be dubbings - though I have yet to hear one.

5) Record Holes

Of course, you say, those circular things in the middle of records. Well, I reply, you just look: the labels may have circular holes, but the shellac may not. I recently saw a Columbia leaflet of 1936 (I think) advertising that their records had polygonal holes - to grip the spindle better! And recently I broke up an HMV record which was badly cracked - and found a multi-sided hole... A number of records I have examined have the polygonal holes; I wonder if EMI did this generally - and if so, how extensively?

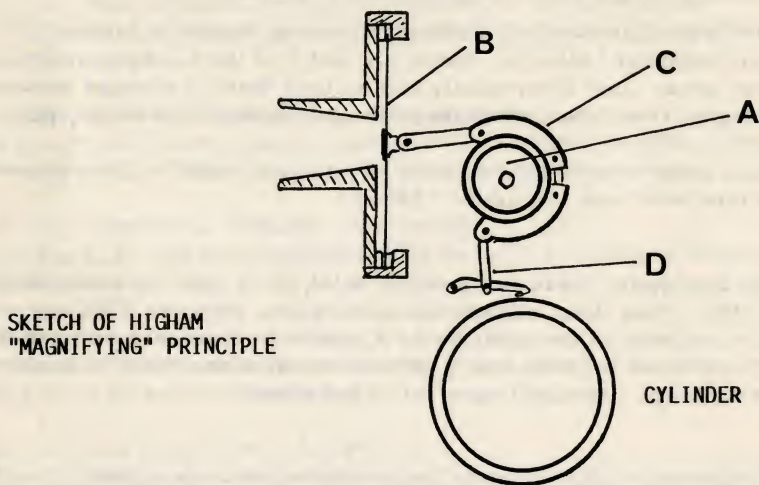
I hope that all this will send collectors scurrying through their collections, with their ears and eyes wide open - there are plenty of odd corners to expose to daylight, even outside ordinary discography.

And I haven't even touched the controversy over fibres versus diamonds!

Yours sincerely,

Peter G. Adamson.

The Columbia Sound Magnifying Model BC or its smaller derivative, the BM Home Premier, are quite different from "normal" machines in that a unique principle is employed. Since the principle has been described in previous articles, I do not intend to go over the ground again in detail but, to set the scene, Fig 1 shows a sketch of the Higham patent where the friction wheel A, driven by an auxiliary shaft from the spring motor, exerts a pull on the diaphragm B through the action of the shoe C. The amount of friction between A and C and hence the pull on the diaphragm is controlled by the action of the stylus bar linkage D. Thus the tiny movements of the stylus produce correspondingly larger movements of the diaphragm and amplification takes place.



SKETCH OF HIGHAM  
"MAGNIFYING" PRINCIPLE

Fig 1

Provided the stylus bar is stationary, ie not playing a cylinder, the pull is steady and the diaphragm is displaced a certain distance from the rest position. The amount of friction and therefore the pull, is intended to be controlled by the action of the stylus in the grooves of the cylinder and hence the displacement of the diaphragm will vary about the equilibrium position. The action can be likened to that of a steam (or electronic) valve, where a small force is used to control a much larger one. Hence the movement of the diaphragm is potentially larger than that of a simple system and since loudness is a function of diaphragm displacement, amplification could be achieved. However, while the amount of friction generated will determine the steady state displacement of the diaphragm from its rest position, the variation of that friction and thus displacement, by the action of the stylus is all important.

There have been many claims for the performance of these machines. Original Columbia literature states that the BC is "at least 16 times louder" than any other machine, while latter day eulogists claim "incredible loudness" or "can be heard half a mile away". On the other hand, some owners are very disappointed with results which are



"little better than a Standard". Such divergence of views prompts the question: what is possible from a BC? Seymour, in his book "The Reproduction of Sound", says "wonderfull" results are possible, but the machines are troublesome and a skilled mechanic is needed to keep them in order. He dismisses the BM as not being in the same class as the BC and implies that it offers no advantage over contemporary machines.

That Columbia should choose 16 as the improvement figure is, at first sight, curious but a clue can be found in the Talking Machine Review of 1905 which states: "The size of the diaphragm has much to do with the volume. It is laid down in physics that the relationship between two vibrating bodies is as to the square of their diameters. The ordinary reproducer diaphragm is one inch in diameter; four inches is the measurement of the diaphragm of the new machine. Hence it would appear that the new graphophone should be sixteen times as loud as the ordinary cylinder type". Ignoring the somewhat debatable conclusion drawn from the laws of "physics", the explanation might sound feasible to the public of 1905. Whatever the actual amplification factor, there can be little doubt that the BC was considerably louder. There was, for example, a demonstration on 11 July 1905 in the Holborn Restaurant before 150 pressmen, where the BC was compared with six contemporary machines. The result "proved to the full its value for exhibition purposes". Again in that year the Isle of Man Times was forced (by the evidence, not legally) to admit the validity of the claims after printing a previous article scoffing at the whole idea.

To try to establish a more objective assessment of the machine's performance, a representative BC was dismantled and overhauled. All bearing friction was reduced to a minimum, springs checked and any slack eliminated from the linkage system. A new diaphragm and cork rings were fitted and the friction wheel and its shoe thoroughly cleaned to eliminate all trace of oil and grease. Finally the shoe was adjusted to give the maximum friction consistent with the capability of the motor to produce smooth running. Similarly, an Edison Model B Standard, fitted with a Model C reproducer and a witch's hat horn, was overhauled and adjusted for optimum performance.

To compare the respective volume of the BC and the Standard, the machines were placed in a semi-anechoic chamber (ie sound absorbing walls and ceiling) such that the mouth of the horn was the same distance (5 ft) from the microphone of a professional sound level meter. The output of the meter was recorded on a very high quality professional tape recorder. To establish a datum from which to assess results a control recording was made using the Edison Standard playing an indestructible cylinder of a cornet and band arrangement. Next, two recordings of the BC playing the same cylinder were taken; the first with the machine fitted with the 14in long and 10in bell horn shown in the 1906 advertisement, and the second with a 42in horn. The latter horn was the nearest size available to the 54in horn sold with the machine but did end with a 3/4in hole at the small end. Since I was reluctant to hack the end off (even in the cause of science) an adaptor was made to match it to the 13/16 in diameter outlet of the BC reproducer. Although I have never seen a genuine BC 54in horn, its small end diameter must have been made to match the reproducer outlet and introducing a restriction in the shape of the adaptor will affect the result in some way.

The resultant tape recordings were analysed using a computer and the graphs of Fig 2 show sound pressure levels against frequency. Don't worry about "micropascals" (unless you are a sound engineer) and notice how the BC produces higher levels at the lower frequencies which might be expected from the larger horn and reproducer. Less expected is that the 42in horn produced a slightly lower level than the 14in horn or

the Standard.

Loudness is, of course, related to sound pressure levels but not in a simple manner. The computer "splits up" the frequency response into 1/3 octaves, takes the average levels and processes them with what is known as an A weighting. If all this is a bit technical, believe me the result is a figure of loudness. The figures at the top of the graph are those appropriate to the three recordings and you will see that the BC with the 14in horn is the greatest. But only just!. For a sound to be twice as loud the figure must be 3dBA greater and from this test the BC was only .75dBA greater, ie less than twice as loud as the Standard.

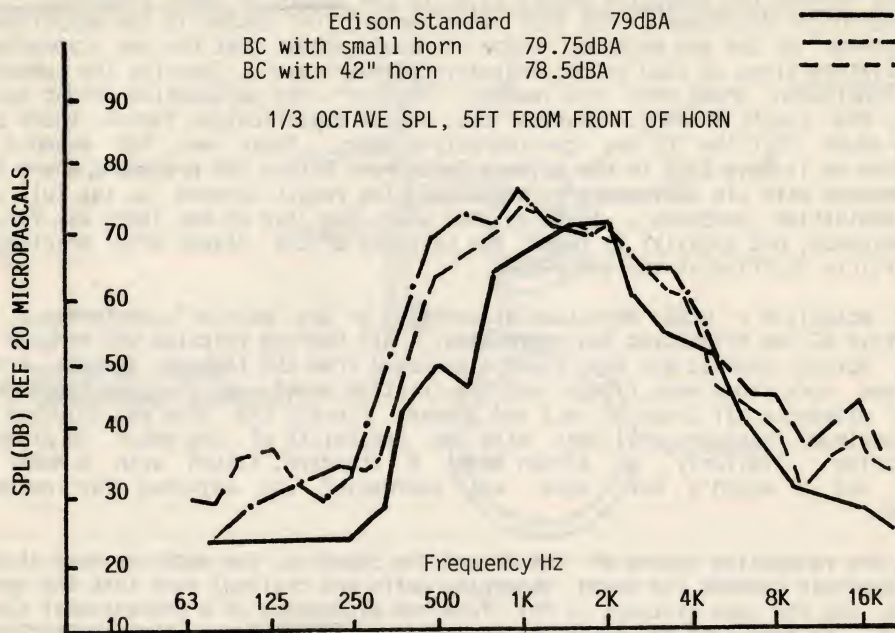


Fig 2

On the basis of this test, it's a good job the Trades Description Act was not in force in 1906, although the claim of superior tone might have been justified. We are left, however, with a nagging doubt: was the BC truly "representative" and performing as was intended? A possible answer may be found in contemporary descriptions of the operating principle. From the Talking Machine News of 15 January 1906: "The friction shoe is of pure rubber, partially vulcanised, so that it has lost its elasticity though still retaining its flexibility. The consequence is that when the rubber is fitted against the amber wheel, it assumes exactly its shape and presses tightly against it." Now rubber hardens with age and becomes brittle; certainly the shoe of my BC is rock hard and it is very probable that all original shoes are in the same state and are incapable of "assuming exactly its (amber wheel) shape".

A visiting Society member from America was emphatic that he had heard louder reproduction from a BC machine in the United States than that from the



"representative" machine used in the tests. On the other hand, the test machine is as loud as any I have heard. So it's gauntlet throwing down time; if anyone believes their BC can be heard "half a mile way", they could put it to the test. Let them take tape recordings of an ordinary good quality machine and their BC under identical conditions and send to me for analysis. The recorder level controls must remain the same for both recordings, the same cylinder must be used, the position of the microphone the same distance from the mouth of the horns and the recordings taken with the machines in the same part of the room. If someone can produce recordings of a machine 16 times louder than a contemporary machine, I shall be delighted but I shall want to know how to get the same results!

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#### HAL CRESSWELL BIRDSALL

It is with regret that I inform you of the death of Society member Hal Birdsall of San Juan Capistrano, California. He died on April 19th, 1983, at the age of 37.

Hal was an avid collector of the recordings of Peter Dawson, Len Spencer and Ernest L. Stevens. His interest in Peter Dawson gained him worldwide contact from others with a similar interest. He was honoured recently by being made Member No. 1 in the newly formed Peter Dawson Appreciation Society.

For several years he suffered from Hodgkinson's Disease. Last summer his doctors told him his cancer was terminal. Even so, and in great pain, he maintained an extensive correspondence with his friends up until his death.

To those of us acquainted with Hal he was totally unselfish as a collector. Nothing was too much trouble for him when it came to helping other collectors locate rare recordings, or with his assistance towards research projects.

J.S. Dales.

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#### EVEN MORE ON FREQUENCIES AND THE LIKE

Dear Mr. Proudfoot,

Referring to Denis Harbour's letter in Issue No. 131, surely as the modulated groove gets nearer the centre of a record, the wavelength for a given frequency will be shortened rather than lengthened, as a consequence of the lower linear speed of the groove relative to the stylus.

While I agree that the wavelength for 14 KHz at 290mm diameter would be 0.0845986 mm (0.0033306 in.), the wavelength for the same frequency at 4.72 inches diam. would, according to my reckoning, be 0.0349736 (0.0013769 in.)

Needless to say, I used one of Mr. Charles Babbage's entirely mechanical calculating engines to arrive at these figures.

Yours sincerely,

Ken Loughland.

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